

**Abstract**

In one embodiment, an integrated circuit (IC) is provided with a thermal diode and a constant current source. In this embodiment, the saturation current of the diode may be determined by means external to the IC. During normal operation of the IC, the constant current source drives a current to the diode, and the forward bias voltage of the diode is used as a temperature indicator. In another embodiment, an IC is provided with a pair of thermal diodes and a constant current source. During normal operation of the IC, each of the diodes receives a current of different magnitude from the constant current source, and a comparison of the diodes' forward bias voltages is used as a temperature indicator.